in the opening of the next question. Indeed the whole system of questioning seems an attempt to do away with a live teacher. At times one is reminded of the story told of the Normal teacher who was developing a lesson ; one of the children remarked, "You want to get this answer, but those questions won't bring it." Such a question is given in ex. 270, where "the shortest answer" is demanded ; this will be given by any bright school-boy as $4y$; duller ones may give $4\ (x+z)$; still duller, $2\ (x+y+z)$ which has already been suggested (p. 17) ; but the author is trying to get (see his printed answers at the back of the book) $2x+2y+2z$.

Faulty mathematical forms placed before children are with difficulty eradicated from their memories. Such forms are much too frequent. (See exs. 279*b*, 442, 443, 444, p. 72 last line, *et pass.* If it is claimed that exs. 442-4 are correct, then exs. 621-6 are faulty.)

Unfortunately, too, the English is not always pure. How will this sentence impress a child ? "*Algebraic* division is the process of finding how many algebraic quantities, *and in what manner*, one of them must be taken to produce the other." Were this an isolated example it might be overlooked.

Of the several mathematical inaccuracies that on page 93, denying the Pythagorean theorem, is the most unaccountable.

The termination of the course by four pages of rules is surely a questionable piece of pedagogy.

On the whole the problems are quite fresh, though hardly what might have been expected from a school where science in the grades plays such a prominent part. The old problem of Metrodorus (310 A.D.) and one or two problems from the mediæval schools have, however, hardly been changed.

It is ungenerous to speak lightly of a serious effort. But the book lays itself open to such criticism as to preclude extensive use until a revision has been made It should be critically examined by some teacher of mathematics before it appears in a second edition.

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F. Klein, Vorträge über ausgewählte Fragen der Elementargeometrie. Ausgearbeitet von F. Tägert. Leipsig, Teubner. 1895. pp. 66 + v, with plates.

This little work, issued at a nominal price, deserves a prom-

inent place in the library of every teacher of elementary geometry. It is very rare that a man of Professor Klein's ability in the higher mathematics condescends to take up questions that are quasi-elementary, or, doing so, treats them in a manner at once scholarly and intelligible to those who are not his peers. Every teacher of elementary geometry knows that an angle cannot be trisected by means of the straight edge and compasses. Yet it is probably within the truth to say that many more than half of such teachers have a lingering idea that, after all, somebody may some day succeed in solving the problem by some happy chance. Most teachers have heard of the discovery of Gauss that added the regular 17-gon to the list of inscriptible regular polygons below a hundred sides ; but what the nature of the construction is, or where to read about it, is all unknown to them. Everyone has a notion that π is an incommensurable number, and occasionally some class hears that this was proved not long ago by Lindemann, but as to the nature of the proof, or as to its whereabouts, few can tell.

For all teachers who are interested in these questions, this is the book. It is divided into two parts. The first deals with the possibility of the construction of algebraic expressions, the second with transcendent numbers and the quadrature of the circle. The Delian and the trisection problems, the partition of the circumference, the construction of the regular 17-gon, and a chapter on higher plane curves are features of the first part The second part contains chapters on the Cantor proof of the existence of transcendent numbers, a historical survey of the attempts at the computation and construction of π, the transcendence of e, and the transcendence of π. The style is as attractive as the book is valuable.

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Hall and Knight, Elementary Algebra. Revised and enlarged for the use of American Schools. By F. L. SEVENOAK. New York: Macmillan and Co., 1895. pp. 478 + x.

Hall and Knight, Algebra for Beginners. Revised and adapted to American Schools. By F. L. SEVENOAK. Macmillan and Co., 1895. pp. 188 + viii. Price 60 cts.

In the Elementary Algebra we are treated to a good book made better. Hall and Knight's works have been and are extensively used in England, and not a little in America, and their